5. — *The South African Mydaidae (Diptera) as represented in the South African Museum.* — By Prof. M. Bezzi.

The species of the family *Mydaidae* can at once be distinguished by the shape of the antennae, and the peculiar venation of the wings.

They cannot be confounded with any other South African Diptera; their greatest affinity is with the *Nemestrinidae* and with the *Apioceridae.* But the species of the former are very different in the short, broad and villose body, in the short antennae, and in the more numerous veins free at end in the apical part of the wings. And those of the latter, of which only one South African species, *Ripidosyrma alastor*, Walker 1849 = *braunsi*, Melander 1907 discovered at Willowmore (Cape) by Dr. H. Brauns is hitherto known, are at once distinguishable by the strong macrochaetae on the sides of the back of the mesonotum, and by the very different antennae. A superficial resemblance in the shape of the head and of the elongate body with the *Asilidae* is no doubt deceptive to an inexperienced eye; but even in this case the shape of the antennae, the absence of macrochaetae and the neuration of the wings are sufficient for an easy identification.

A peculiar and very conspicuous feature of the *Mydaidae,* is the presence of two prominent callosities or *bullae* at the sides of the hind border of the second abdominal segment; these bullae are equally developed in both sexes and have a different colouration from that of the surronnding parts; they are often described by the authors as an interruption of yellowish or whitish hind border of the second segment of the abdomen.

The family of the *Mydaidae* is not a numerous one, only 140 species distributed among 16 genera, are at present known.

Moreover the species are of the greatest rarity among the Diptera, being but poorly represented in collections, and usually only by single specimens; no long series have been obtained, and therefore we have no idea of the variability of the species. They are represented chiefly in South America and Australia, being very scarce in the Oriental Region. In Africa they seem to occur chiefly along the

Mediterranean region and in the South, and are almost entirely absent from Central Africa. But the number of African species is quite small, in the old Monographs of Wiedemann and Westwood only a few are included. Loew in his work on South African Diptera describes only 1 species of *Cephalocera*; Gerstaecker in his Monograph has added a few. The total mumber of the known Ethiopian species is at present 17. In recent times no new species have been described from South Africa, except those published by Gerstaecker in 1868.

Very little is known of the habits of the adults. Old writers have stated that they are predaceous, and this was stated afresh recently by Prof. Arias; but it seems that they are flower-visitors. It must be remembered that some species have the mouth parts atrophied, while others have them elongated and slender. The known larvae live in wood and live probably on wood-boring larvae of Coleoptera. Some South American species are the largest of all the living Diptera; but the South African ones are only of medium size, and have as a rule an elongate body of Asilid appearance.

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FAM. MYDAIDAE.

The South African genera of ***Mydaidae***, with the addition of four new ones, can be distinguished as follows. All have the circlet of spines at the end of the female abdomen, and in all the palpi are hardly visible. It is not at all impropable that species of the gen. ***Mydas*** will be found in Africa, as they are present in the Oriental Region; they can be recognised by the non spinose ovipositor, by the well developed palps and by the presence of the hind marginal cross-vein on the wings. In all the genera here enumerated both branches of the cubital fork (R 4 & R 5) end into the first longitudinal vein (R 1); the North African genera *Rhopalia* and *Perissocerus*, which have the lower branch of the cubital fork (R 5) ending into the costa, may perhaps be found to occur in South Africa.

Key to the Genera.

(2) 1. Hind margin of the wings in the middle with a cross vein, which is the end of the upper branch of the fifth longitudinal vein ($M_3 + M_4$); * both branches of the cubital fork (R_4 and R_5) ending into the first vein (R_1), but the fourth vein (M_{1-2}) ending free in the costa; terminal cross-vein of the third posterior cell ** about as long as that of the

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* This M_4 is the Cu_1 of the Comstock-Needham System; but according to the recent investigations of Dr. Tillyard, the Cubitus is a strong straight unbranched vein in the Diptera, as it is also in their ancestral forms, the Mecoptera. Thus Cu_2 becomes Cu_{11} and Cu_1 becomes M_4.

** Under the name of third posterior cell I have always called the cell placed immediately below the discoidal cell; it is considered as the fourth posterior cell by authors, and is really the fourth in some non African genera, like *Diochlistus*, *Trichonus* or *Mitrodetus*.

discoidal cell; proboscis rudimentary or very short; metapleurae bare; 2—3 last abdominal segments of the female quite bare; hind tibiae with strong terminal spine, at least in the male . . *Ectyphus*, Gerst.

(1) 2. No hind-marginal cross-vein, the upper branch of the fifth vein ending into the fourth vein; terminal cross-vein of the third posterior cell usually much shorter than that of the discoidal cell; 2—3 terminal segments of the female abdomen with a peculiar pubescence directed forwards; hind tibiae without terminal spine, or with a very small one.

(6) 3. Fourth long vein (M_{1-2}) ending free into the costa, at some distance from the terminal stalk of the second submarginal cell, the first posterior cell being therefore broadly open at end.

(5) 4. Cubital fork not appendiculated; proboscis shorter than the mouth, not projecting; hind femora, even in the female, much thickened and with 4 rows of strong spines below; hind tibiae with a small but distinct terminal spine, body nearly bare . . *Haplomydas*, gen. nov.

(4) 5. Cubital fork appendiculate; proboscis well developed, usually rather long and always projecting; hind femora less thickened, those of the female almost simple, with 2 rows of spines below; hind tibiae without terminal spine; body more or less villose . . . *Leptomydas*, Gerst.

(3) 6. Fourth longitudinal vein ending into the first vein or in contact with it; the second submarginal cell never stalked at end, and the first posterior cell always closed at end and sometimes stalked.

(10) 7. Fourth longitudinal vein meeting at costa with the first, no stalk of the first posterior cell being therefore present; proboscis short or even rudimentary.

(9) 8. Hind femora not thickened, never spinose beneath; proboscis rudimentary; third antennal joint very short; body smooth *Halterorchis*, gen. nov.

(8) 9. Hind femora thickened and armed with strong spines placed on prominent tubercles; proboscis short, but well developed; third antennal joint long; abdomen pedunculate; body deeply punctulate *Mydaselpis*, gen. nov.

(7) 10. Fourth longitudinal vein ending into the first, the first posterior cell being thus provided with a well developed stalk; proboscis well developed and long; abdomen not pedunculate, never deeply punctulate; hind femora spinose beneath.

(12) 11. Upper branch of the fifth longitudinal vein (M_4 or Cu_1) originating from the second basal cell, as in all the preceding genera, the third posterior cell being thus as broad at base as at end; proboscis thick, and usually, with broad terminal flaps; body and legs nearly bare *Nomoneura*, gen. nov.

(11) 12. The above named vein issuing from the anal cell, the third posterior cell being thus very broad at base; proboscis thin and sharp, with very small terminal labella; body and legs rather villose . *Cephalocera*, Latr.

GEN. ECTYPHUS, Gerstaecker. 1868.

This is a typical South-African genus, very distinct from all the other on account of the presence of a hind-marginal cross-vein in the wings, and of the strong spine at the end of the posterior tibiae.

These characters are those of a neotropical true *Mydas;* but it differs clearly from that genus in the presence of the circlet of spines at end of the ovipositor.

The body is shorter and thicker than in all the other South-African genera, *Haplomydas* excepted; it is bare or nearly so, and the teguments are smooth; the callosity before the halteres is always bare; the legs are bare. The anterior ocellus is well developed. The proboscis is rudimentary or very short, not projecting. The third antennal joint is long, being longer or as long as the terminal club. The hind femora are thickened and spinose beneath, at least in the male; the spines are placed in 2–4 rows. The male genitalia are small and not free.

The wings are as long as the abdomen or nearly so, and have a rather thick ambient vein. The upper branch of the cubital fork (R 4) is appendiculed at the base. The discoidal cell is always acute outwardly, its contact with the second posterior cell being always punctiform. Third posterior cell broader at end than at base, its terminal cross-vein being about as long as that of the discoidal cell. Third posterior cell not placed on the same line as the first.

The genus *Ectyphus* may be considered up to the present as monotypic. The two North American specimens described by Williston belong in all probability to a peculiar genus, as indicated by the different male genitalia; *limbatus* 1886 has a terminal spur of the hind tibiae in the male but not in the female, and likewise *towsendi* 1897 as stated by Cresson in 1907.

In the collection of the South African Museum there are 3 species, which may be distinguished as follows:

(2) 1. Halteres pale yellowish; face golden yellow; abdomen with rather broad yellow bands; male with thickened hind femora and spurred hind tibiae; female with slender hind femora and not spurred hind tibiae, which bear 3 equally distinct bristles on the posterior side . *pinguis*, Gerst.

(1) 2. Halteres black; face black or reddish; abdomen without yellow bands or the segments, only with narrow yellow hind borders.

(4) 3. Both sexes with thickened hind femora and spurred hind tibiae; hind tibiae of the female destitute of bristles at the posterior side; face black in the male, reddish in the female; abdomen with narrow yellow hind borders. . . . . *armipes*, sp. nov.

(3) 4. Female with reddish face, and with thickened hind femora but unarmed hind tibiae, which bear 3 strong bristles at the posterior side; abdomen black, red in the middle, without clear hind borders on the segments *abdominalis*, sp. nov.

ECTYPHUS PINGUIS, Gerstaecker, 1868.

Easily recognisable on account of the golden yellow face, the entirely red antennae, and the rudimentary proboscis.

A couple of specimens from Dunbrody, Cape 1897. (Father J. O. Neil). One female in my collection from Kleinemond, Grahamstown, (Cape) January 1897. (Miss White).

The female is much larger than the male; the yellow bands of the abdomen may be interrupted in the middle, like those of the male. The bullae of the second abdominal segment are narrow, nearly linear, and blackish.

ECTYPHUS ARMIPES, sp. nov.

A robust species, allied to the preceding one, but distinct by the darker colour of the body, antennae and legs, and by the strong terminal spur of the hind tibiae in both sexes.

Type ♂ and type ♀; Stellabush, Durban (Natal), H. W. Bell-Marley, January 1915.

♂ ♀. Length of the body 15–16 mm.; of the wing 13–14 mm. The male is much darker than the female and has black femora.

Head entirely black in the male, with grey dust near the border of the eyes on the occiput, clothed with whitish hairs on frons and face, those of the latter being longer. Head of the female reddish, with a black median stripe on the frons, and clothed with yellowish hairs. Antennae of the male black, with the third joint reddish; those of the female reddish, with infuscated basal joint and terminal club; in both the first joint is twice as long as the very short second, and the third is more than twice longer than the two basal joints together; the club is a little shorter than the third joint, broad, swollen, ovate. Proboscis not longer than the mouth opening, but well developed, with broad terminal flaps. Thorax of the male entirely black, opaque, with reddish humeri and with a reddish stripe above the notopleural line extended to the postalar calluses; pleurae entirely black; rather shining, bare, with some white hairs on the pteropleura alone; on the back there is a sparse whitish pubescence, arranged in two broad longitudinal stripes; scutellum entirely black, with spare whitish hairs. Thorax of the female reddish on the back, with three broad longitudinal black stripes, the middle one abbreviated behind, the lateral ones abbreviated in front and attenuated behind, but not prolonged to the scutellum; pleurae and scutellum as in the male, but the ptero-pleural hairs are yellowish, like the short pubescence of the back of the mesonotum. Mesophragma entirely black in the male and with two reddish spots in the female. Squamae blackish, with bare, narrowly yellowish border; halteres black in both sexes. Abdomen of the male entirely black, even on venter, the segments 2–5 with a narrow whitish-yellow hind border interrupted in the middle, 6th segment with a less distinct one, 7th without, but reddish on the sides; the hairs are short and whitish, only at sides of the first segment are several longer ones, genitalia in part reddish, clothed with longer white hairs, with three lamellae above and only two below. Abdomen of the female black, but all the segments with a yellowish hind border, except the last one which is entirely reddish; it is quite bare, even on the sides of the base and on the terminal segments; venter black, except the terminal segments, which are dark reddish; spines of ths ovipositor reddish. Bullae of the second segment rather broad in both sexes and shiny black. Legs of the male with black coxae, trocanters and femora, but the latter on the hind pair dark reddish at end; tibiae and tarsi entirely reddish, those of the last pair distinctly darkened. Legs of the female entirely reddish, with black coxae and trocanters. The short pubescence of the legs is whitish and more developed in the male, yellowish in the female; claws black with red tips; pulvilli yellowish, equally developed in both sexes. Hind femora thickened in both sexes, but more in the male than in the female, in both armed below with numerous and strong spines, which are disposed on four rows, the two external rows consisting of 1–3 spines only, and in the male the single external spine is much longer; all these spines are placed on small but distinct tubercles. Hind tibiae curved in both sexes, and armed in both with a developed and strong terminal spur; but they have no distinct strong bristles on the outer side. Wings in both sexes broad, more intensively infuscated in the female than in the male; the second submarginal and all the posterior and basal cells with clear patches in the middle, more developed in the female. Second longitudinal vein straight; cubital fork appendiculated and rather irregular, the lower branch being deeply sinuous; first posterior cell narrowed at end; discoidal cell acute but sessile at end, while in *pinguis* it is stalked; axillary lobe long and broad; alula rounded, without fringe.

ECTYPHUS ARMIPES PRETORIENSIS, n. sub. sp.

A couple of specimens from Pretoria. September. (H. K. MUNRO). ♂ ♀. Very like the type species, but distinct: 1. the halteres are yellowish in both sexes; 2. the wings are less infuscated, the veins being not edged with fuscous; 3. the spur of the hind tibiae is less developed, chiefly in the female; 4. the abdomen of the female is broadly reddish in the middle. In the female example the upper branch of the cubital fork is broadly interrupted at the base, its basal portion with the appendix being altogether wanting.

ECTYPHUS ABDOMINALIS, sp. nov. ♀.

Easily recognisable in the female sex by the darker legs, the non spurred hind tibiae and the black abdomen, which has a red longitudinal stripe along the middle. From both the preceding, species it is distinguished in the more regular shape of the lower branch of the cubital fork, running parallel with the fourth vein along its whole course.

Type ♀ a single specimen from Montagu, Cape Col., January 1876. (R. Trimen).

♀. Length of the body 15 mm., of the wing 12 mm. Head black, clothed with dark grey dust. but the face is reddish with whitish dust. Occiput with sparse reddish hairs near the middle and above near the eyes, which are edged with a grey stripe. Frons densely grey-dusted, with dark reddish hairs; face with pale yellowish hairs, which are whitish near the mouth. Antennae black, with the third joint dark reddish on its basal half and twice as long as the first two joints together; terminal club blackened, a little shorter than the third joint. Proboscis shorter than the mouth, black, with broad terminal flaps. Thorax entirely black, only the humeri and the postalar cells being dark reddish; on the back it is opaque, dark grey-dusted, with short dark pubescence; pleurae shining, reddish-brown along the sutures, bare, except a few short hairs on the pteropleura. Scutellum black, pubescent and dusted like the back; mesophragma black, reddish-brown on sides; squamae dark yellowish, with short whitish fringe; halteres blackish. Abdomen shining black, bare, even at base, with sparse, short dark hairs; the broad dorsal red stripe is extended from the 2nd to the 5th segment and is continuous; there are no light hind borders of the segments, and the bullae are dull black. Venter glittering black, reddish brown at base; spines of the ovipositor reddish. Legs with black coxae and trochanters; the 4 anterior femora are dark reddish, the posterior ones blackish-brown, tibiae and tarsi light reddish; all the hairs and bristles reddish; hind femora rather thick, armed below with strong reddish spines disposed in four rows, but without distinct basal tubercles; hind tibiae unarmed at end, with four distinct bristles at hind border; claws red, with black tips. Wings greyish-hyaline with the veins edged with fuscous, only the costal and basal cells and base of the marginal cell being entirely infuscated, but with clear stripes in the middle. The second submarginal cell is of a regular shape, being about as broad in the middle as at end, the lower branch of the cubital fork being regularly and gently curved and quite parallel with the fourth vein; the first posterior cell is as broad in the middle as at end; the discoidal cell is stalked at end. Axillary lobe and alula edged with fuscous, the latter more broadly, and with a short but distinct dark fringe. Third posterior cell with punctiform base.

HAPLOMYDAS, gen. nov.

Nervuration of the wings as in *Leptomydas*, lacking a hind-marginal crossvein and with free end of the fourth longitudinal vein; but the upper branch of the cubital fork not appendiculated at base. Moreover the anal vein is straight, being suddenly curved below near the end; the ambient vein is very thin, almost iridescent. The lower veins of the first and of the third posterior cells are not placed on the same line. The terminal cross-vein of the first basal cell is separated from the terminal cross-vein of the discoidal cell, meeting with it and with the third longitudinal vein nearly at the same point; in other words the discal cross vein is reduced to a short stripe or only a simple dot, but this may be due to some anomaly of the unique type specimen.

Head as in *Leptomydas*, but with the frons less hollowed at vertex; anterior occellus well developed; eyes bare. Third antennal joint shorter than in *Leptomydas*; proboscis very short, not projecting beyond the mouth opening, but well formed, with broad terminal flaps. Palpi not distinct. Body nearly bare, the metapleurae with a few scattered short hairs; the teguments are smooth, with no sculpture on thorax, and with a few scattered, impressed points on the abdomen, this last is broad at base, not pedunculate. Legs bare, proportionally short and stout; hind coxae greatly swollen; hind femora very much thickened, club-shaped, and armed below with four rows of strong spines; hind tibiae much arched at base, and with a small, acute spur internally at end.

The segment of the ovipositor bearing the circlet of spines is exserted, not concealed as in *Leptomydas*,

Type: The following new species.

From *Rhopalia* and *Perissocerus*, which have a non appendiculated second submarginal cell, the present genus is distinguished, also from

Syllegomydas, by the very different neuration of the tip of the wing. From *Eremomydas*, with which it agrees in the veins of the tip of the wing and in the shortness of the proboscis, it is distinguished by the non appendiculated second submarginal cell, and by the second longitudinal vein ending into the first far from the end of the upper branch of the cubital fork.

HAPLOMYDAS CRASSIPES, sp. nov.

A small, bare species, at once distinguished by its generic characters.

Type ♀; a unique specimen from S. Rhodesia, Bulawayo, May 1917, (R. W. Tucker.)

♀. Length of body 12 mm.; with the antennae 13.8 mm.; of wing 9 mm. Head black, but yellowish on the face, very shiny along the middle line, densely clothed with whitish dust on sides of frons. It is clothed with rather short, not bushy, white hairs; the dark postvertical bristles are short but strong. Antennae proportionately short, about as long as the transverse diameter of the head; they are dull reddish-brown, with the terminal club brighter reddish; the first joint is twice as long as the short second joint; the third joint is less than twice longer than the two basal joints together, its terminal portion being nearly as long as the first joint *); terminal club swollen, ovate, as long as the third joint, with a distinct, rather long, truncate protuberance at end. Proboscis reddish-brown, with black flaps. Back of thorax dull black, with reddish-yellow humeri and postalar calli; it is almost bare, and has four longitudinal stripes of whitish dust, placed at equal distance, the exterior ones in contact with the notopleural line, and these beset with short scattered hairs. Pleurae shining black, bare, the pteropleurae reddish-yellow, the metapleurae with very short pale hairs. Scutellum and mesophragma black, dark grey-dusted, bare; squamae and halteres pale yellowish. Abdomen shining black, even on venter, only the terminal segment dark reddish-brown; all the segments have a broad yellowish hind border, which is even broader on the venter; bullae minute & whitish, rather iridescent. The abdomen is bare, even the whitish hairs of the sides at base being very sparse and short; but the two terminal segments are clothed with a rather long and dense yellowish pubescence, directed forwardly. The exserted terminal segment of the ovipositor is rounded, reddish, with dark reddish spines. The surface of the abdominal tergites shows scattered impressed points. Legs with the coxae entirely yellowish, clothed with very scarce yellowish hairs; the spines of the hind femora are black or dark brownish; the hind tibiae are bare, and destitute of bristles on hind side; claws with yellowish base and black tips; pulvilli yellowish; hind coxae with a broad, soft, opaque area in front. Wings greyish-hyaline, but they appear a little infuscated on account of the wrinkled membrane. The veins are reddish; second longitudinal vein straight; second submarginal cell regular, its terminal stalk about as long as the basal one; first posterior cell broadly open; terminal cross vein of the discoidal cell as long as the basal one and perfectly parallel with it; third posterior cell much broader than the discoidal cell, buth with a punctiform end; the lower veins of the first and of the third posterior cells are rather distant from the hind border of the wing. Anal cell of peculiar form; its extreme end being suddenly bent downwards, its point being short and provided with a long stalk; the axillary lobe is therefore of trapezoidal shape; alula rounded, rather small, not fringed.

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* This terminal portion of the third anternal joint is in reality a fourth joint, followed as a fifth joint by the so-called club, considered as the clubbed style.

GEN. LEPTOMYDAS, Gerstaecker, 1868.

This genus includes the greater number of species belonging to the South African fauna; but it is not peculiar to South Africa, having a very wide distribution in Mediterranean countries, the Oriental region and even North America. But it contains evidently heterogenous elements. Thus *L. indianus*, Brunetti, 1912, is described as having a short proboscis.

The nearctic species, judging from one example of *pantherinus* Gerst. in my collection, are not congeneric with the Old World kinds; the above named species has indeed a short proboscis, not thickened, and almost unarmed hind femora, and the fourth longitudinal vein ending into the first, as already noted by Osten-Sacken, and shown in the maginficent figure given by Cole, *Proc. Calif. Acad. Sci.* (4), IX, 1919, pl. 15, fig. 10; but it cannot be a *Syllegomydas* on account of the long antennae and of the well developed, even if short proboscis. The other species show more differentiated characters, having long or short proboscis, open or closed first posterior cell, and appendiculated or not appendiculated upper branch of the cubital fork.

All the South African species here enumerated are typical, and agree in the following characters. They have all a narrow and elongate body, which is sometimes rather villose, and have a non-stalked abdomen, which is broader at base than in the middle; the teguments are smooth, not sculptured. The metapleurae are hairy. The anterior ocellus is sometimes distinct, chiefly in the female. The third joint of the antennae is long; it is obviously divided in two parts, which however are not always easily seen; the terminal club is broad and long. Wings proportionately short, always shorter than the elongate abdomen. The ambient vein is thinner than in *Ectyphus*, sometimes hardly visible, and there is no hind-marginal cross vein. Both branches of the cubital fork end into the first longitudinal vein, the upper one always appendiculated at base; second submarginal cell always stalked at end; discoidal cell always acute at end and as a rule stalked. Fourth longitudinal vein ending free into the costa, at some distance from the end of the first; first posterior cell therefore always broadly open as in *Ectyphus*. First and third posterior cells placed at equal distance from the hind border of the wing, their lower veins running on the same line, parallel with the hind border self; the third posterior cell, in opposition to what is observed in *Ectyphus*, is narrowed at end, being there as narrow as at base; its terminal cross vein is therefore much shorter than that of the discoidal cell, and sometimes even punctiform. The type of the genus was established by Coquillett in 1910: *Mydas lusitanicus*, Meigen. 1820.

The two South-African species, *westermanni* and *rufithorax*, placed in the genus *Cephalocera* by the authors, are to be referred to the present genus, the numerous species of which can be distinguished as follows: —

(2) 1. Thorax and base of abdomen with short and sparse hairs in both sexes, the metapleurae being almost bare; antennae as long as the proboscis, with the third joint not longer than the terminal club; back of mesonotum with four broad white longitudinal stripes; legs not pilose . . ♂ ♀. *luctuosus*, sp. nov.

(1) 2. Thorax and base of abdomen clothed with long and dense hairs, the metapleurae hairy; antennae longer than the proboscis, with the third joint longer than the club; back of mesonotum not so conspicuously striped; legs pilose.

(8) 3. The long and dense hairs of the thorax and of the base of the abdomen are reddish or yellowish; back of mesonotum not distinctly striped; abdomen proportionately short and broad, in the male even the terminal sternites clothed with long hairs.

(5) 4. Abdomen clothed with black hairs, except on the two basal segments, and with less developed yellow hind borders . ♂ *westermanni*, Wied.

(4) 5. Abdomen entirely clothed with pale hairs, and with more developed yellowish hind borders to the segments.

(7) 6. Hind tibiae shortly pilose . . . ♂ ♀ *rufithorax*, Wied.

(6) 7. Hind tibiae with long and dense hairs . . ♂ *lanipes*, sp. nov.

(3) 8. Hairs of thorax and of base of abdomen less developed and a whitish colour; back of thorax often with stripes of pubescence; abdomen longer and thinner, with only the basal sternites with long hairs in the male.

(32) 9. First posterior cell broadly open at end as usual, the fourth longitudinal vein ending into the costa at a considerable distance from the end of the first, this distance being always longer than the stalk of the second submarginal cell; proboscis long as usual.

(31) 10. Antennae and proboscis quite black or only in part reddish; wing veins rather thick and of a brownish or dark yellowish colour.

(22) 11. Males.

(13) 12. Back of mesonotum distinctly shining under the vestiture, not at all striped . . . . *nitidus*, sp. nov.

(12) 13. Back of mesonotum not shining.

(19) 14. Abdomen shining even on the middle segments.

(16) 15. Face black; back of mesonotum less distinctly striped . *nivosus*, Gerst.

(15) 16. Face yellow; back more distinctly striped.

(18) 17. Hind tibiae internally with short villosity, the hairs being shorter than the breadth of the tibiae . . . . *humeralis*, Gerst.

(17) 18. Hind tibiae on the inner side with long villosity, the hairs being longer than the width of the tibia . , . . *braunsi*, sp. nov.

(14) 19. Abdomen opaque, except sometimes on the two basal segments, which are shining.

(21) 20. Abdomen with shining basal segments, the other opaque, with broad grey bands on posterior half, and with the yellowish hind borders narrow and present only on the middle segments; hind tibiae villose; wings faintly but distinctly infuscate on apical half, and with black veins *opacus*, sp. nov.

(20) 21. Abdomen entirely opaque, all the segments with broad and prominent yellow rings at the hind border; hind tibiae nearly bare; wings hyaline, with all the veins yellowish . . . . *paganus*, Gerst.

(11) 22. Females.

(24) 23. Back of mesonotum shining and quite unstriped . *nitidus*, sp. nov

(23) 24. Back of mesonotum opaque and often striped.

(30) 25. Abdomen shining black or shining brown, with yellowish rings at hind border of the segments.

(29) 26. The yellowish abdominal rings are narrow, and moreover they are not distinct on the three terminal segments.

(28) 27. Face entirely yellow . . . . . *humeralis*, Gerst.

(27) 28. Face black, or only yellow at the sides . . *nivosus*, Gerst.

(26) 29. The yellowish abdominal rings are very broad and equally developed on all the segments, even on the terminal ones . *paganus*, Gerst.

(25) 30. Abdomen reddish-yellow, except at base and end, and with black spots on the sides of the middle segments. . . *braunsi*, sp. nov.

(10) 31. Antennae and proboscis entirely reddish-yellow; abdomen of the female shiny reddish-brown, with broad yellowish rings at the hind border of all the segments; wing veins slender and pale yellowish or whitish . . *flavirostris*, sp. nov.

(9) 32. First posterior cell very narrow at end, the fourth vein ending almost

in contact with the first, the distance being about as long as the stalk of the second submarginal cell; proboscis short; abdomen of the female reddish-brown, with broad yellowish rings at the hind border of all the segments . . . . . . *subclausus*, sp. nov.

Group I: LUCTUOSUS.

The present group, consisting now of only one species, is very distinct from all the others chiefly on account of the shortness of the antennae. and of the nakedness of the body.

LEPTOMYDAS LUCTUOSUS, sp. nov.

A very distinct, proportionately small species, of a deep black colour with white ornamentations in both sexes, and with quite hyaline wings with black veins.

Type ♂ and type ♀, a couple of specimens from Matroosberg, 4000 ft., Ceres Div., (Cape) Jan. 1917, (R. M. Lightfoot).

♂ length of body 13 mm., of wing 7 mm.;

♀ length of body 16 mm., of wing 8,5 mm. Head black, very shiny in the middle of frons and face, but the sides of the face are rather broadly ferruginous. Face and frons narrower than in all the other species. Occiput densely grey-dusted, with scattered white hairs, denser in the male, chiefly on the upper middle part; in the female there is a small row of distinct but short dark reddish post-vertical bristles, which however are not extended laterally beyond the eyes. Frons of male as broad as one eye, in the female distinctly broader; ocellar tubercle very glistening, the anterior ocellus well developed, chiefly in the female; sides of frons densely clothed with white dust and with long and dense white hairs in the male, but with scarce ones, almost wanting towards the middle in the female. Face shining black in the middle, densely white-dusted on the sides, clothed in the male with dense and long white hairs, which are shorter and less abundant in the female. Antennae black and proportionately short, being shorter than the transverse diameter of the head; first joint twice as long as the very short second and nearly bare; third joint rather thick, scarcely twice the length of the basal joints; terminal club ovate swollen, reddish-brown, about as long as the third joint, with a short but distinct truncate protuberance above at the end. Proboscis entirely shining black, 1.5–2 mm. long, with rather broad terminal flaps. Thorax of a dull black colour on the back, the humeri and the postalar calli reddish, but densely grey-dusted; there are four broad, complete, longitudinal stripes of white dust, the lateral broader than the inner ones, in contact with the notopleural line, and extending from the humeri to the postalar calli; pleurae likewise dull black, with reddish-brown pteropleurae; the hairs of the back are very short and dark, but in the male the lateral white stripes are clothed with rather long but sparse white hairs; the pleurae are bare, with severed short whitish hairs on the pteropleura only. Scutellum black, bare, with a small reddish stripe on each side of the posterior edge. Mesophragma greatly developed, convex, black, grey-dusted, whitish on the sides and there with scattered whitish hairs in the male. Squamae and halteres blackish. Abdomen dull black in both sexes, but the three terminal segments are rather shining in the female, and the sides are distinctly reddish-brown in the male; is is proportionately short and broad, being in the female much thicker than in the male; the segments 2–6 have in both sexes a well developed whitish wing at the hind border, that of the second being in both interrupted by the dull black bullae; the venter is reddish-brown, darker in the male than in the female, and is very shining on the apical half in the female. The hairs are white, and rather long but not dense at the sides of the two basal segments in the male, and very short on the remainder; in the female the abdomen is practically bare, the first segment only having very short white hairs on the sides, the two terminal segments are in the female completely clothed with equal, rather long blackish hairs directed forewards. Male genitalia reddish-brown, pale-haired, with the middle upper lamella deeply emarginate at end, the upper lateral lamellae acute and triangular, and with the lateral horn-like appendages flat, shining black on the apical half; the lower lamella is rounded. Spines of the ovipositor reddish-yellow. Legs very dark in both sexes, with black coxae and black trocanters, blackish or reddish-brown femora, reddish tibiae and tarsi; the latter however almost blackish in the female. Hind femora equally but not much thickened in both sexes, armed below with strong black or reddish spines disposed in two irregular rows extending from the base to the end, and placed on small, less distinct tubercles; hind tibiae without apical spur, both with 2–3 strong bristles. All the legs are nearly bare, the four anterior tibiae on the inner side with a row of bristly hairs, are more robust in the female, the female has moreover very strong bristles on the underside of the tarsi; claws reddish, with black tips; pulvilli reddish. Wings proportionately short, purely hyaline in the male, with a faint darkish shade in the middle in the female; all the veins are of a deep black colour in both. Second submarginal cell rather narrow and regular, appendiculated at base and with well developed terminal stalk; praefurca exceedingly short; first posterior cell broadly open at end; discoidal cell with a long stalk at the end; third posterior cell as broad at end as at base, its terminal cross-vein being about half as long as the terminal vein of the discoidal cell; anal vein rather wavy; alula rounded, not fringed, hyaline.

Group II: WESTERMANNI.

This is evidently a group characteristic of the South African fauna, but not easy to define in a few words if one has before him numerous examples of the genus. Those of the present group are at once recognisable by the proportionately broader, shorter and more hairy body; an examination of Pl. 4 IV. of Wiedemann's Monograph, comparing figs. 15 and 16 with the others, is sufficient to give a good idea of the group.

The two species *westermanni* and *rufithorax* have been placed in the genus *Cephalocera* by Guérin-Meneville, Westwood and subsequent writers; but erroneously, as even Wiedemann's figures show clearly the neuration of *Leptomydas*; Gerstaecker had no specimen for examination.

LEPTOMYDAS WESTERMANNI, Wiedemann 1819.

At once distinguished in the male from all the other species on account of its black and black-haired abdomen, except at base.

One ♂ specimen from the Cape, without precise locality, labelled by Bigot *Cephalocera longiventris,* a name which has never been published.

The species was described in a recognisable manner and subsequently figured by Wiedeman, more than a century ago. Antennae long, with the third joint three times as long as the first two joints together, and much longer than the terminal club. Proboscis entirely shining black, with broad terminal labella, 2·5 mm. long. Face entirely black. Meso- and sternopleurae bare, pteropleurae villose, metapleurae with a tuft of dense long hairs. Squamae brownish. bare; halteres dark yellowish. Abdomen reddish-brown on sides and at end; male genitalia reddish, with the upper lamella slightly emarginate at end, and the horn-like appendages shining reddish, curved above. Venter entirely reddish, clothed with long pale hairs on its whole length, those of the two terminal segments being blackish. Legs villose, chiefly the coxae, and femora and those of the hind pair; hind femora thickened, with two rows of strong reddish spines, below, placed on small tubercles; hind tibiae simple at end and villose in the inner part, the villosity about as long as the width of the tibia, but not very dense; claws red with black tips. Wings with the second submarginal cell of regular shape, provided with a short stalk, and with the lower branch of the cubital fork gently curved and parallel with the last portion of the fourth longitudinal vein; first posterior cell broadly open at end; third posterior cell as broad at base as at end, its terminal cross vein being equal to that of the first basal cell; first and third posterior cells with their lowar veins at equal distance from the hind border of the wing.

LEPTOMYDAS RUFITHORAX, Wiedemann, 1821.

Allied to the preceding species, but distinct in the less thick body and in the different clothing of the abdomen.

Three specimens from Cape Town: one male, February 1915 (R. M. Lightfoot); another ♂ (J. C. BRIDWELL); one female without data.

The male is very like that of *westermanni*, but the hind tibiae are less villose internally, the villosity being scattered and shorter than the width of the tibiae. The female has the abdomen longer, and is less villose than the male. Occiput with some bristly hairs above between the fur. Face yellow, proboscis reddish below; antenmal club reddish, with a blackish oval spot underneath at end. Abdomen shining black, the two basal segments with long pale hairs; the segments 2–5 with broad yellow hind border, that of the second with shining black bullae; 7–8 segment reddish, with the peculiar pale hairs directed forwards; spines of the ovipositor reddish; venter reddish-yellow, with scattered pale hairs even on the terminal sternites. Hind femora less thickened than in the male but equally spinose below; hind tibiae with two irregular rows of strong reddish bristles on the outer side. In the specimen at hand the legs are entirely reddish, only the four anterior coxae being black; the femora lacks the dark markings mentioned by Wiedemann.

LEPTOMYDAS LANIPES, sp. nov.

Closely allied to the preceding, but differing in the male by the much more villose hind legs.

Type ♂, a single specimen from Triangle (Cape), January 1885 (L. Péringuey).

♂. Length of body 13 mm.; of wing 9 mm. Head entirely black even on the face; occiput densely grey-dusted and clothed with dense white hairs; frons shining, above with dense tufts of pale yellowish hairs, whiter in the anterior part and on the face. Antennae wholly black, with the terminal club greyish at end and much shorter than the third joint. Proboscis black, 2·5 mm. long. Thorax shining black on the back, clothed with dense reddish-yellow hairs, but posteriorly before the scutellum with a tuft of white ones divided in the middle and bent forward on the sides. Pleurae shining black, with densely villose pteropleurae and metapleurae. The small scutellum is shining black and bare. Squamae darkish; halteres dark yellowish with darker knob. Mesophragma shining black, bare on the middle but villose on the sides. Abdomen shining black; the first segment and the basal half of the second are clothed with long, reddish-yellow hairs, while all the other segments have pale yellowish hairs; segments 2–6 with yellowish borders; venter entirely reddish yellow, with long yellowish hairs on all the sternites. Genitalia reddish-brown, yellowish pilose, shaped as in the preceding species, with the lateral horn-like appendages shining reddish. Legs entirely dark reddish with black coxae and with the hind femora and hind tibiae darkened outwardly; they are clothed with yellowish hairs, and those of the hind pair are very villose, chiefly on the tibiae, where the villosity is longer than the width of the tibia; hind femora not much thickened, with two rows of strong spines below; hind tibiae with 3-4 strong bristles at end; claws almost entirely reddish. Wings hyaline, with a faint but distinct diffused yellowish patch in the middle. Veins entirely reddish; second submarginal cell regular, with a short stalk; first posterior cell broadly open; third posterior cell as broad at base as at end; the two lower veins of the first and of the third posterior cell at equal distance from the hind border of the wing,

Group III: HUMERALIS.

This group is the more numerous in South Africa, and the species are more difficult to distinguish. They are recognisable by their thin and elongate body, the abdomen of the male being attenuated and less hairy in the apical half; the abdomen of the female is thicker but always elongate and nearly bare. The hind femora are less thickened in both sexes, but are always spinose beneath.

Besides the species recorded in the table, it is probable that *dispar*, Loew belongs to the present group; it is described from Mozambique as being in both sexes of a yellowish colour, with black stripes on thorax and black transverse bands on abdomen.

Mydas rufipes, Westwood, from an unknown locality or from Sicily, is in all probability a species of the genus *Syllegomydas.* on account of its short antennae.

LEPTOMYDAS NITIDUS, sp. nov.

Easily distinguished from all the other species of the present group in having in both sexes the back of the mesonotum distinctly shining like the abdomen. Type ♂ and type ♀, a couple of specimens from Matroosberg, 4000 ft., Ceres Div., (Cape) January 1917. (R. M. Lightfoot).

♂ ♀ Length of body 15–16 mm.; of wing 9–10 mm. Head entirely shining black, even on the facial tubercle, but densely clothed with whitish dust on the sides of occiput, frons and face; it is moreover clothed with long white hairs, those of the female being only a little shorter than those of the male, and they are of the same colour above and below the antennae; in the female there are three darkish postvertical bristles on each side, well distinguishable between the fur. Antennae long, quite black in both sexes; proportion of the length of the joints as in the species of the preceding group. Anterior ocellus well developed in the female. Proboscis shining black, as long as the antennae, with broad terminal flaps. Thorax on the back shining black, not striped, entirely clothed with equal white hairs which are tuft-like on the sides and are not much longer in the male. Pleurae shining black, bare in the middle and below, with dense white tufts on ptero- and metapleurae; the rounded prominence above the front coxae is whitish-dusted and is clothed with a tuft of long white hairs. Scutellum and mesophragma shining black, the former bare, the latter with long white hairs on the sides; squamae dirty brownish; halteres blackish. Abdomen elongate cylindrical, attenuated behind, that of the female being not much thicker than in that of the male; it is in both sexes entirely shining black, but the venter is reddish in the female and has red. spots in the middle segments in the male; the tergites 2–6 have yellowish rings at the hind border, broader in the female, and that of the second segment broadly interrupted in both sexes by the large, shining black bullae. All the hairs of the abdomen are white, being dense and long on the two basal segments chiefly in the male; the 4–5 terminal segments have in the female the peculiar pubescence directed forwards; the venter of the male on the terminal half has not the tufts of hairs which are to be seen in the species of the *westermanni* group. Male genitalia reddish brown, white pilose, shaped as usually, with the upper middle lamella not deeply emarginate, and with the two horn-like lateral appendages shining reddish and curved upwards.

Spines of the ovipositor black. Legs entirely reddish-yellow, with black coxae and with the hind femora distinctly infuscated above; the hairs are white and rather long, chiefly those of the hind pair; hind tibiae of the male with scattered but long inner villosity; hind femora less thickened, not much more robust in the male, with two rows of strong reddish spines placed on small tubercles; hind tibiae at end with 2–3 bristles, and moreover in the female with several strong reddish bristles on both sides; tarsi bristly on the underside; claws red with black tips; pulvilli yellowish. Wings hyaline in both sexes, but in the female with a faint yellowish tint towards the middle. Veins dark reddish, blackened in the terminal half; second submarginal cell regular and with a short terminal stalk; first posterior cell broadly open; third posterior cell only a little narrower at end than at base; the lower veins of the first and of the third posterior cell are at the same distance from the hind border of the wing; anal vein wavy. Axillary lobe broad; alula rounded, glassy, without fringe.

LEPTOMYDAS NIVOSUS, Gerstaeker 1868.

A normal species with the back of thorax dullish and less distinctly striped in both sexes, and with a shining black abdomen, which has rather narrow yellowish rings.

A couple of specimens from Matjesfontein (Cape) November 1910 (R. M. Lightfoot), one male from Cape Town, and another from Hex River. (L. Péringuey).

For description of the male see Gerstaecker; the terminal club of the antennae is sometimes dark reddish. The hitherto unknown female is of about the same size as the male, its abdomen being not much thicker. The face is ferruginous on the sides; the hairs of head and base of abdomen are shorter; there are 4–5 postvertical bristles on each side. Abdomen shining black, with rather broad yellowish hind borders on the segments 2–5; bullae small and shining black; the hairs are white, short and scattered, except at base, those of the four terminal segments being directed forwards; venter shining reddish, but blackened at end; spines dark reddish or blackish. Legs as in the male, but less villose and with thinner, almost not thickened hind femora; hind tibiae with less developed bristles. Wings as in the male, but with a little more darkish tint in the middle. Nervuration regular in both sexes; the terminal crossvein of the third posterior cell rather short, shorter than the basal one.

LEPTOMYDAS HUMERALIS, Gerstaeker 1868.

Closely allied to the preceding species, but distinguished by the more distinctly striped back of the thorax and by the broadly yellow face in both sexes. But as these are characters of lesser value, it is possiblə that both species may be united as a unique one under the present name.

A couple of specimens from Bushmanland, Jackals Water (Cape), October 1911 (R. M. Lightfoot); an additional female specimen from Triangle, (Cape), January 1895. Postvertical bristles less distinct; anterior ocellus well developed.

The male not hitherto described, is almost the same as that of the precediug species, but has an entirely yellow face. The neuration of the wings is the same, but there is a tendency for the terminal stalk of the discoidal cell to be lost, the third posterior cell becoming thus punctiform at end, as represented in Gerstaecker's figure.

LEPTOMYDAS BRAUNSI, spec. nov.

Closely allied to *humeralis*, but distinct in the longer villosity of the hind tibiae in the male, and in the rufous abdomen of the female.

Type ♂ and type ♀, a couple of specimens in the writer's collection, from Willowmore, (Cape), 15th November 1920, taken *in copulâ* by Dr. E. Brauns. in whose honour the species is named.

From the European *lusitanicus*, which presents the same sexual dichroism, tho present species is distinguished by the longer antennae and by the spinose hind femora. It is possibly allied to *fulviventris*, Bigot, from the Sudan, the name of which must however be changed, as there is an earlier *L. fulviventris,* Leon Dufour 1850, which is the female of *lusitanicus.*

♂ ♀. Length of the body 18–19 mm.; with the antennae 21–22 mm.; of the wing 12–13 mm. Head entirely shining black, except the face, which is yellowish in the male; near the eyes there is whitish dust; it is clothed with long and bushy white hairs of about equal length in both sexes; postvertical bristles of the female distinct. Antennae quite black and of equal shape in both sexes; first joint twice as long as the second; third joint with a less distinct division, three times as long as the first two joints together; the terminal club is shorter than the third joint, broad, greyish at end. Proboscis of the same length as the antennae, 3 mm. long, extending beyond the end of the third joint, shining black, with broad terminal flaps. Thorax entirely dull black, with the humeri dark reddish; on the back it is distinctly striped, the white hairs being disposed in five longitudinal rows, the median being the narrowest of all, while the exterior ones, those in contact with the notopleural line are the broadest and provided with longer hairs; pleurae likewise black, greyish-dusted above, shining below, with long white tufts on the ptero- and metapleurae. Scutellum shining black; bare; mesophragma black, less shining, with long white hairs on the sides. Squamae blackish, with a dirty whitish border; halteres blackish, with pale yellowish stalk. Abdomen of the male entirely shining black, but with the terminal segments a little grey-dusted; the three basal segments are clothed with long white hairs, the other segments with short ones which are black in the middle and white on the sides and behind; 2nd, 3rd and 4th segment with broad, 5th with narrower whitish yellow hind border, that of the second being interrupted by the shining black bullae; venter yellowish, with the three terminal sternites blackish, and with only the 3 basal sternites clothed with long white hairs; genitalia dark reddish, blackish at base, white-haired, with the horn-like appendages proportionately short and broad. Abdomen of the female shining rufous, with the first segment shining black and with the three terminal ones dull black, but the sixth with a triangular rufous spot at hind border; the segments 2–5 with a broad black spot on each side and with a distinct, narrow whitish hind border, that of the second, interrupted by the shining black bullae; all the hairs are white, long on the two basal segments, short on the rest, directed forwards on the five terminal segments; venter reddish, the 3rd and 4th segment with broad black band at hind border, the four terminal segments dull black, and with all the hairs white and short; spines dark reddish, with black tips.

Legs dark reddish, with black coxae and darkened femora; the hairs are white, scarce and short in the female, long and abundant in the male chiefly on all the femora and on the whole hind pair, the tibiae having inwards a very long villosity; hind femora less thickened in both sexes, but always more distinctly in *lusitanicus*, and armed underneath with strong reddish spines; hind tibiae of the female with only 4–5 strong bristles internally near the end; bristles of tarsi whitish; claws reddish with black tips; pulvilli yellowish. Wings whitish hyaline in both sexes, with a faint yellowish tint on the terminal half, chiefly in the female and along the veins; veins reddish on the basal and blackish on the terminal half. Second submarginal cell regular, with a short stark; first posterior cell broadly open; third posterior cell almost as broad at end as at base; lower veins of the first and of the third posterior cells at the same distance from the hind border of the wing.

Axillary lobe broad; alula rounded.

LEPTOMYDAS OPACUS, sp. nov.

Nearly allied to the three preceding species, but easily distinguishable in the male sex by the opaque abdomen which is shining at the base only; from the following species it differs in the much less developed and almost wanting yellowish hind border of the abdominal segments.

Type ♂, a unique specimen from Dunbrody, Cape Colony, 1901 (Father J. O. Neil).

♂. Length of the body 18 mm.; of the wing 12 mm. Head entirely black, shining on middle of frons and face, densely clothed with whitish dust on sides of both and on the occiput; it is clothed with long and dense white hairs; there are also some dark yellowish postvertical bristles. Antennae long, quite black, with the usual proportion in the length of the joints as in the preceding species. Anterior ocellus distinct. Proboscis black, of the usual length and shape. Back of thorax dullish black, grey-dusted and distinctly striped, clothed with whitish hairs, which are longer on sides and in front of the scutellum. Pleurae in great part reddish or reddish-brown, grey-dusted, with long whitish tufts on ptero- and metapleurae.

Scutellum shining black, bare; mesophragma black, grey-dusted, with white hairs on the sides. Squamae dirty whitish, with short whitish fringe; halteres blackish. Abdomen black, shining on the two basal segments alone, on the remainder it is dull, being clothed by a dark dust; the second segment has a narrow yellowish hind border interrupted by the shining reddish-brown bullae; the segments 3–5 have a narrow whitish hind border, and in addition on the 6th have a broad band of grey dust at end, the 7th being entirely grey; the hairs are long and white at base, short beyond it and white on sides and black in the middle. Venter reddish-brown at base, and with long whitish hairs there, blackish grey-dusted and with short darkish hairs on terminal half. Genitalia black, whitish pilose, the horn-like appendages shining brown. Legs reddish-yellow, with black coxae and darkened femora; they are whitish tomentose and whitish pilose, the hind tibiae with short villosity; hind femora less thickened, with two rows of strong reddish spines below; claws almost entirely black; pulvilli yellowish. Wings hyaline at base, faintly but distinctly infuscated on more than the apical half; veins black, in part reddish-brown near the base; second submarginal cell regular, with short terminal stalk; first posterior cell broadly open; third posterior cell with the terminal cross vein as long as the basal one, the lower veins of the first and of the third posterior cells being at equal distance from the hind border of the wing. Axillary lobe broad; alula rounded, hyaline, not fringed.

LEPTOMYDAS PAGANUS, Gerstaecker 1868.

A very distinct species, on account of the entirely opaque abdomen of the male, and of the more numerous and broader yellowish wings of the abdomen in both sexes.

Male from Cape Town; female from Stellenbosch (Cape). (L. Péringuey). The male is as described by Gerstaecker, but has the face entirely black and the terminal club of the antennae reddish in the middle; pleurae black; hind tibiae nearly bare; wings hyaline, with the veins not bordered by fuscous; second abdominal segment shining at the base only. A ♂ example from O'Kiep, Cape, agrees better with Gerstaeker's description, the face being yellowish and the antennae wholly black.

The female not described hitherto is more briefly hairy and thicker; the face is ferruginous at sides; the front ocellus is well developed; the antennae are entirely black; the thorax is rather shining on the back, chiefly on the posterior half, and is more broadly reddish on sides and on pleurae; Abdomen shining black, with reddish-brown terminal segments and reddish-yellow venter; the segments 2—7 with broad yellowish hind borders, that of the second interrupted by the shining black bullae; the three terminal segments with the usual pubescence directed forwards; spines of the ovipositor blackish or reddish brown. Legs as in the male, but with thinner hind femora; claws red with black tips. Wings hyaline, with reddish veins.

LEPTOMYDAS FLAVIROSTRIS, sp. nov.

Allied to the preceding, but distinct by the almost entirely yellowish colour of the antennae and proboscis, by the more lightly coloured body and legs, and by the almost whitish wing veins.

Type ♀ and an additional example of same sex, from Hex River, (Cape) December 1883. (L. Péringuey).

The present species is probably allied to *L. dispar*, Loew, from Mozambique.

♀ Length of body 18–20 mm.; of wing 12–13 mm. Head entirely reddish-yellow, shining black in the middle of the frons, blackish near the eyes and there densely clothed with greyish or yellowish dust; hairs rather long and dense, yellowish above, white below; four or five yellowish postvertical bristles on each side. Anterior ocellus less developed. Antennae entirely yellowish, only the terminal club darkened at end; third joint three times as long as the two basal joints together, and longer than the club· Proboscis as long as the antennae, entirely yellowish above and under, the terminal flaps blackish. Thorax entirely reddish, but blackish and grey-dusted in the middle of the back, clothed with yellowish hairs, but the pteropleural and notopleural tufts are whitish. Scutellum and mesophragma shining reddish, the latter with long whitish hairs on the sides. Squamae and halteres dirty whitish or yellowish. Abdomen shining reddish-brown; with more or less darkened basal tergites; it is clothed with long white hairs on the second basal segments, and with short ones on the remainder, those of the terminal four segments being yellowish and directed forwards. The yellow hind borders of the segments are broad and present from the 2nd to the 7th; the bullae are shining black, large and very striking. Spines of the ovipositor reddish. Legs entirely yellowish, with reddish coxae, and with short whitish or pale yellowish pubescence; hind femora very little thickened, with strong yellowish spines below; hind tibiae with strong yellowish bristles; claws yellowish, with black tips. Wings whitish hyaline. with entirely pale yellowish or whitish veins. Second submarginal cell rather dilated below before the end (but regular in the second example), with short terminal stalk; first posterior cell broadly open; terminal stalk of the discoidal cell very short or even absent, the third posterior cell being punctiform at its outer end; the two lower veins of the first and third posterior cells are at equal distance from the hind border of the wing.

Note. A small male specimen without label, may be considered as that of the present species. It measures only 15 mm. in length and the wing 10 mm. The head is as in the female, with longer and entirely whitish hairs; proboscis and antennae as in the female and of the same colour. Thorax dull black on the back, reddish on the sides and on the pleurae; the hairs are longer and quite white, even on the back which is striped. Scutellum shining black; mesophragma reddish-brown. Abdomen dark reddish brown, with the two basal segments shining and clothed with long white hairs; the other segments are opaque, with short hairs, 3–5 with narrow whitish hind border and with a broad grey band before it, becoming broader on segments 6–7 hind border of the second segment yellowish, with broad shining black bullae. Genitalia reddish, white haired, of usual shape. Legs entirely yellowish, whitish-haired; hind tibiae with short villosity; hind femora only a little thickened, with less developed spines below; they appear therefore almost simple and unarmed. Wings hyaline, with dark yellowish veins and with regular nervuration, the first posterior cell only being more narrowed at end.

LEPTOMYDAS SUBCLAUSUS, sp. nov.

Closely allied to the preceding species, but dlstinct by the short proboscis and by the much more narrowed first posterior cell which is almost closed at end. The short proboscis of the present new species is like that of *lusitanicus*.

Type ♀ and an additional specimen of the same sex from Spectakel, Namaqualand (Cape) October 1890 (R. M. Lightfoot), but the latter specimen is doubful having shorter and broader wings, and having a differently coloured abdomen, with black lateral spots.

♂. Length of body 17 mm.; of wing 13 mm. Head entirely shining black, with dark grey dust on the sides of frons and of face, and on upper part of occiput; it is clothed with long whitish hairs. Anterior ocellus not distinct. Basal joint of the antennae black; the rest is wanting in case of the type. Proboscis very short, but well developed; it is 1·5 mm. long, projecting from the mouth opening only by the broad terminal flaps; it is black above and at end, and reddish below. Thorax dull black on the back, with reddish humeri and reddish sides; it is clothed with short yellowish hairs; pleurae dull blackish with reddish patches, and with whitish tufts on ptero- and metapleurae. Scutellum and mesophragma reddish-brown, the latter blackish behind. Squamae and halteres yellowish, the latter with darker knob. Abdomen shining reddish brown, with the basal tergites blackened; it is clothed with long whitish hairs at base, and with very short ones on the remainder, those of the four terminal segments being directed forwards; all the segments, except the first and the last, have broad yellowish hind borders; the bullae are shining black but small; the venter is entirely reddish, and, likewise with broad yellowish hind border on the segments; spines of the ovipositor reddish. Legs yellowish, with reddish coxae; hind femora very little thickened, almost simple, with pale yellowish spines below. Wings hyaline, but with a faint yellowish tint and with reddish veins. Second submarginal cell puffed up at base, with the terminal vein ending very near the stalk of the second submarginal cell, the first posterior cell being thus almost closed at border; discoidal cell sessile at end, the outer end of the third posterior cell being punctiform; the lower veins of the first and of the third posterior cell are placed at the same distance from the hind border of the wing.

HALTERORCHIS, gen. nov.

A peculiar genus, distinct by the very short antennae and by the rudimentary proboscis.

Body smooth, almost bare. Head with the vertex not hollowed. No ocelli.

Mouth opening almost closed, proboscis rudimentary. Antennae shorter than the transverse diameter of the head; third joint equal in length to the two first joints together; terminal club greatly swollen, rounded, as long as the whole antennae. Eyes bare. Thorax with nearly bare metapleurae. Abdomen with a peculiar pattern; terminal segment of the ovipositor exserted, and with a circlet of thin and long spines; bullae very minute. Legs slender; hind femora not thickened and unarmed below, only with scattered bristles; hind tibiae straight, without spur at end. Wings with appendiculated second submarginal cell; fourth longitudinal vein meeting at end with the stalk of the second submarginal cell, the first posterior cell being thus clothed at the border. Lower vein of the third posterior cell placed much nearer the hind border of the wing than that of the first, in the same position as in *Ectyphus*. Anal vein less wavy; ambient vein almost indistinct; no hind-marginal cross-vein.

Type: the following new species.

HALTERORCHIS INERMIS, sp. nov.

A small species, very distinct, besides the generic characters, by the peculiar abdominal pattern.

Type ♀, a unique specimen from O'Okiep, Namaqualand, (Cape).

♀. Length, of body 9 mm., with the antennae 10 mm.; of the wing 8 mm. Head black, but densely grey-dusted even on the middle of the frons, only the distal end of the ocellar tubercle being shining black; it is clothed with rather long white hairs; postvertical bristles less developed. Frons and face with parallel sides, very broad, broader than one eye. Antennae reddish-brown, with the terminal club bright reddish but infuscated outwardly; first joint only a little longer than the second, with long white hairs; third joint as long as the two first joints together, its terminal portion (or fourth joint) very short; the terminal club is as long as the whole antenna, and almost sphaeroidal in front view. The inferior part of the head is shining black; the very small rudiment of the proboscis is yellowish. Thorax black, dark grey-dusted, quite opaque even on the pleurae, with reddish humeri; with short, scarce, whitish hairs disposed on four longitudinal stripes on the back; the pleurae are practically bare, with short hairs on the pteropleurae, and with less distinct ones on the metapleurae. Scutellum grey-dusted on the basal half, shining black on the apical half, bare, but concealed below the long whitish hairs of the hind part of the mesonotum; mesophragma grey-dusted, bare. Squamae and halteres whitish. Abdomen rather short and broad, of a dull blackish colour, dark reddish-brown on middle of the tergites and rather shining black on sides; it is clothed with scarce whitish hairs at base, and with yellowish pubescence, directed forward on the two terminal segments. The peculiar pattern consists in a yellowish band at the base of the segments 2–5, but more developed on 2 and 3. This band is broadly interrupted in the middle, and does not reach the sides laterally; it is thus reduced to two transverse spots, one on each side of the segments, with the external ends bent behind at right angles; moreover there are narrow yellowish rings at the hind border of the segments 2–6; the venter is entirely reddish, unspotted. The last segment of the ovipositor is reddish, with dark spines. Legs slender, entirely yellowish, with blackish coxae and darkened femora; they are nearly bare, but all the tibiae and chiefly those of the hind pair are beset with yellowish long bristles; hind femora simple, with some scattered yellowish bristles below; claws and pulvilli yellowish, the former with black tip. Wings greyish-hyaline, with reddish veins. The first basal, the discoidal and the third posterior cell have parallel sides and are all of about the same width; the third posterior cell is punctiform at end. The second longitudinal vein ends into the first at equal distance as both branch of the cubital fork, the three terminal segments of the first vein being thus all of the same length. Alula very small and transverse, without fringe.

MYDASELPIS, gen. nov.

A very characteristic genus, distinguished from all the others on account of its pedunculate abdomen and of its deeply punctulate and brightly coloured body. The neuration of wings shows also some peculiarities.

Head with little hollowed vertex; in front view it is narrowed below, the eyes having no parallel sides, but being convergent inferiorly. Anterior ocellus distinct, at least in the female; and placed in the middle of the frons. Eyes bare. Antennae long, longer than the transverse diameter of the head; third joint more than three times as long as the two first joints together; terminal club elongate, as long as the third joint. Proboscis thick, with broad terminal flaps, projecting, but proportionately short being no longer than the half of the length of the antennae or nearly so. Palpi not distinct. Thorax bare, even on the ptero- and metapleurae; it is rugulose and deeply punctulate on the back. Squamae without fringe. Abdomen distinctly pedunculate, at least in the male, its narrowest point being on the third segment; it is almost bare and strongly sculptured with impressed points on the tergites, and with less marked ones on the sternites. Male genitalia of usual shape; ovipositor of the female with the circlet of spines, but with the terminal segment not exserted. Legs rather stout and nearly bare; hind femora more thickened in the male, in both sexes armed underneath with two rows on very prominent tubercles. Hind tibiae straight, without terminal spur, and not bristly except at end. Wings broad. Second longitudinal vein straight and ending into the first at some distance from the end of the upper branch of the cubital fork. Second submarginal cell appendiculated at base, rather narrow, puffed up below towards the middle with a long terminal stalk. Fourth vein at end meeting at costa with the first, the first posterior cell being thus closed but not stalked. Discoidal cell of trapezoidal shape, shortly stalked at end, its apical cross vein being nearly parallel with the basal one and more or less shorter; there are only three posterior cells, the second (or third) being fused with the fourth (or fifth); third posterior cell as broad or broader than the discoidal cell, and about as broad at base as at end; the lower veins of the first and of the third posterior cells are placed on the same line, at equal distance from the hind border of the wing; anal vein rather straight, the terminal part of the anal cell being thus less curved below, and its terminal stalk being rather short. Praefurca very short, or nearly absent; in the type species the base of the third longitudinal vein is prolonged backwards into a long stump, which is much longer than the praefurca itself and has a free end. Alula transverse, not fringed. No hind-marginal cross vein; ambient vein thin, sometimes less visible in the female.

Type: MYDASELPIS PÉRINGUEYI, sp. nov.

The two species before me can be distinguished as follows: —

(2) 1. Thorax black with red markings; abdomen red with black base and middle segments (4th & 5th); submarginal cell at end much narrower than the first posterior cell at end . . . *péringueyi*, sp. nov.
(1) 2. Thorax red with black markings; abdomen entirely black, except at end; submarginal cell at end as broad as the first posterior cell at end *variolosus*, sp. nov.

MYDASELPIS PÉRINGUEYI, sp. nov.

A very distinct, handsome fly, looking like a species of *Systropus* or *Cosiops*.

Type ♂, a single specimen without the antennae from Hex River, (Cape) 27th December 1882, labelled by Bigot as *Cephalocera péringueyi*; the specific name been maintained here, in honour of Dr. L. Péringuey.

♂. Length of body 17 mm.; of wing 13 mm. Head black, but the face reddish with a narrow black median stripe; only the middle of the frons is shining, the rest being clothed with a dark grey-dust. Anterior ocellus rudimentary. The golden yellow hairs are bushy at the vertex, on the sides of the frons anteriorly, and on the face. Basal joints of the antennae red, the first less than twice the second in length; the remainder wanting in the type. Proboscis red, even on the terminal flaps, only the median line of the upper side being black, it is short measuring only 1·5 mm. in length. Thorax peculiarly regulose-punctulate on the back; it is dull black, but the neck, the humeri and a spot above them, and the postular cells are red. The pleurae are dull black, with the callosities above the front coxae, the upper part of the pteropleurae and the root of wings red. On the back there is a very scarce and short golden pubescence, disposed on two longitudinal stripes; the pleurae are bare. Scutellum dull black and bare, a narrow hind border on the back of the mesonotum being red; mosophragma deep black, narrowly red anteriorly at the sides, bare, Squamae yellowish; halteres reddish. Abdomen with the first segment black, with short golden hairs at the sides and on a complete transverse band of the hind border; the rest of the abdomen is bare. Second and third segments entirely red, but the former with a narrow black base and with small black bullae; segments 4–5 entirely dull black with a less distinct yellowish hind border like the 2nd, 3rd and 6th; 6th and 7th red with black sides;

8th segment and genitalia entirely red, clothed with short golden hairs; horn-like appendages shining, yellowish, and below them in the middle a short process bifurcate at end. Venter black, with the 2nd, 3rd and 6th sternites red, but all the sternites with narrow yellowish hind borders; it is bare and rather shining. The tergites are also a little shining at sides, but they are opaque on the whole median part chiefly on account of the deep and strong sculpture which is distinct but less developed on the venter. Legs entirely yellowish, with reddish coxae; they are almost bare; the prominent tubercles and the strong spines of the underside of the not much tkickened hind femora are reddish-yellow; claws and pulvilli yellowish, the former with black tips. Wings yellowish along the costal and subcostal cells, broadly infuscated in the middle to the end, greyish-hyaline along the hind border except in the middle where a faint infuscation is noticeable, apically the fuscous is extended to the end of the first posterior cell, which is narrowly infuscated along its fore border and broadly infuscated at its base, but hyaline on the remaining part; the fuscous patch has a prominent tooth towards the outer end of the discoidal cell. The costa, the subcosta and the base of the other veins are yellowish; the remainder of the veins is reddish and then blackish towards the end. Anal cell, axillary lobe and alula hyaline. Second submarginal cell narrowed at end, terminal stalk of the discoidal cell very short; terminal stalk of the anal cell likewise short; base of the third longitudinal vein much prolonged beyond the praefurca and ending free into the first basal cell.

MYDASELPIS VARIOLOSUS, sp. nov.

Closely allied to the preceding species, but distinguished by the coloration of the body and wings, and by some minor details of the nervuration.

Type ♀, a single specimen in the writer's collection, from South Africa, collected by Junod, (? Shilowane, Transvaal) and given me many years ago by Dr. Escher-Kunddy, of Zurich; this specimen his stood for many years in my collection under the erroneous name of *Cephalocera fasciata*, Wied.

♀ Length of body 15 mm., with the antennae 18 mm., of the wing 9 mm. Head shining black, the face being only a little dark ferruginous in the middle; occiput dull grey-dusted, with a whitish pallinose stripe near the eyes. Postvertical bristles dark reddish, short. Anterior ocellus well developed. Hairs of frons and face not numerous, never long, of a golden-yellow colour, Antennae very long, reddish with darkened or blackish end of the third joint and of the terminal club; first joint only a little longer than the second; third joint 4–5 times longer than the two first joints together, with the terminal portion (4th joint) long and broader; terminal club elongate, about as long as the third joint, tip rounded and without distinct prominence. Proboscis not quite 2 mm. long, black above and red below, even on the terminal flaps. Thorax entirely red, with a broad black median stripe on the back beginning at the neck, becoming attenuated behind and ending at some distance from the scutellum; it is almost bare and opaque, being strongly rugulose; the pleurae are smooth and rather shining red, with only the anterior and posterior stigmata black; they are bare. Scutellum shining red, with a small black spot on the lateral depression; mesophragma red, whitish-pallinose, with a narrow black border above. Squamae brownish, halteres blackish. Abdomen entirely shining black, even dark reddish, short. Anterior ocellus well developed. Hairs of frons and face not numerous, never long, of a golden-yellow colour. Antennae very long, reddish with end of the third joint and of the terminal club darkened or blackish; first joint only a little longer than the second; third joint 4–5 times longer than the two first joints together, with the terminal portion (4th joint) long and broader; terminal club elongate, about as long as the third joint, tip rounded and without distinct prominence. Proboscis not quite 2 mm. long, black above and red below, even on the terminal flaps. Thorax entirely red, with a broad black median stripe on the back beginning at the neck, becoming attenuated behind and ending at some distance from the scutellum; it is almost bare and opaque, being strongly rugulose; the pleurae are smooth and rather shining, red, with only the anterior and posterior stigmata black; they are bare. Scutellum shining red, with a small black spot on the lateral depression; mesophragma red, whitish-pollinose, with a narrow black border above. Squamae brownish; halteres blackish. Abdomen entirely shining black, even on the venter, only the terminal segments being reddish; hind border of the 2nd and 3rd segment narrowly yellowish, that of the former with small and reddish bullae; it is quite bare, with scarce whitish hairs at the base below, and there whitish-pollinose; only the 8th segment has the short pubescence directed forward; spines of the ovipositor reddish. The surface is deeply punctulate, more superficially on the venter; the hind borders of the tergites are narrowly smooth. Legs yellowish, with reddish coxae, and with scarce and short pale yellowish pubescence; hind femora less thickened, but with strong spines placed on prominent tubercles on the terminal half; claws with black tips. Wings entirely infuscated, with only some stripes in the middle of the cells and a narrow hind border greyish hyaline; veins entirely black, even at the base. Second submarginal cell as broad at end as the first posterior cell; the terminal stalks of the discoidal and of the anal cells are longer than in the preceding species; praefurca almost absent, the third longitudinal vein with only a short prolongation beyond it.

NOMONEURA, gen. nov.

I have founded here the present new genus for some species. which are much like those of *Leptomydas*, being distinguished chiefly on account of the stalked first posterior cell, all the veins of the wing-tip uniting with the first. Owing to this character they were formerly placed in the following genus *Cephalocera*; but as this last genus shows very extraordinary features in the neuration of the wings, while in the present new genus the neuration is quite normal (whence the proposed name), it is necessary to separate them. The genus seems to be represented also in the Oriental Region, the Indian species *Cephalocera annulata*, Brunetti 1917, with short proboscis and neuration of wings as in *nigra*, Macq., being possibly referable to it. The main characters of the new genus are as follows. Head not much hollowed at vertex, less pilose, in the female nearly bare. Eyes bare; anterior ocellus well developed. Antennae very long, more than twice as long as the transverse diameter of the head; the fourth joint appears as a part of the club, which is elongate and not much swollen. Proboscis thick, with broad terminal flaps, rather long, projecting as far as the middle of the third antennal joint or even further. No distinct palpi. Thorax bare, even the metapleurae with only a few hairs or quite bare. Abdomen not pedunculate, more or less elongate, with the surface smoth and nearly bare, or only a little hairy at the base. Male genitalia of the usual shape; ovipositor with the circlet of spines, but with the segment bearing them not exserted. Legs slender; hind femora less thickened even in the males, armed inferiorly with two rows of not very long spines which are placed on non-developed tubercles; hind tibiae straight or only faintly curved, with no terminal spur, but with well developed bristles. Wings with all the terminal veins uniting with the first, the first posterior cell being thus closed at end and stalked; the end of the second vein into the first is distant from that of the upper branch of the cubital fork; second submarginal cell appendiculated at base, of regular shape or swollen at the base inferiorly; terminal stalk of the discoidal cell very short or even absent, at any rate the terminal cross-vein of the third posterior cell is much shorter than the basal one; the lower veins of the first and third posterior cell are rounded, placed at the same distance from the hind border of the wing, but with a re-entering angle at their junction; lower vein of the third posterior cells, that is the upper branch of the fifth longitudinal vein, issuing from the second basal cell, as in all the preceding genera; anal vein wavy; anal cell with a more or less elongate point, and with a more or less short stalk. Alula rounded, not fringed; ambient vein very thin; no hind-marginal cross vein, thus there are only three posterior cells, the second being fused with the fourth.

Type: MYDAS FASCIATUS, Wiedemann 1828.

The known species may be distinguished as follows: —

A. Proboscis short, not projecting beyond the mouth; fourth longitudinal vein meeting at costa with the first posterior cell being thus sessile at end *paradoxa*, n. sp.
B. Proboscis long and projecting; first posterior cell stalked.
(2) 1. Abdomen elongate, with pale yellowish hind border of the segments; third antennal joint thickened; hind tibiae of the male straight; thorax more or less reddish on the sides; posterior veins of the wing close to the hind border . . . . . *fasciata*, Wied.
(1) 2. Abdomen less elongate, without yellowish transverse bands; third antennal joint not thickened; hind tibiae of the male little, but distinctly curved; thorax quite black; posterior veins more distant from the hind border.
(6) 3. Legs reddish or yellowish, with only a little infuscated femora.
(5) 4. Abdomen of the male in greater part reddish-yellow; wings yellowish *partita*, Gerst.
(4) 5. Abdomen of the male blackish or brownish, that of the female broadly red in the middle; wings infuscated . . . *callosa*, Wied.
(3) 6. Legs blackish, with quite black hind femora; abdomen of the male black, more or less broadly red in the centre; wings more intensively infuscated *nigra*, Macq.

NOMONEURA PARADOXA, n. sp.

Type female from Pretoria, 19th. September 1915.. (H. K. MUNRO),

The present species is a true *Nomoneura*, but in the characters of the proboscis and of the first posterior part of the vings, it agrees with *Halterorchis*, which has however very different antennae, and with *Mydaselphis*, in which the abdomen is stalked and deeply punctate.

♀ Length of body 16 mm.; of wings 11 mm.; of antennae 3–6 mm.

Head shining black, the face dark reddish; the short scattered hairs are darkish near the antennae, longer and whitish at vertex and below. Anterior ocellus well developed. Antennae very long, black; first joint twice as long as the second; third joint cylindrical, long, not thickened; terminal club elongate a little shorter than the third joint, dark reddish in the middle. Proboscis very short, not projecting beyond the mouth, with narrow terminal flaps. Thorax shining black and nearly bare; there is a short pale pubescense on the sides of the back, and on the propleurae and metapleurae there are very sparse white hairs; the humeral calli, a stripe above the notopleural line, the postalar cells and a stripe before the scutellum are reddish; the pleurae are dark reddish above and below. Scutellum and mesaphragma reddish. Halteres blackish. Abdomen shining black, bare, with very scarce and short pale hairs near the base and with a few impressed points; the two terminal segments are reddish, with dark short hairs directed forward; venter shining black, with the two terminal segments reddish; spines of the oviposter reddish. Legs simple, entirely pale yellowish, even to the end of the tarsi; coxae and trocanters dark reddish; claws reddish with black tip; hind femora less thickened, elongated, but with strong yellowish spines below. Wings with a faint grey-yellowish tint and with yellowish veins; second submarginal cell appendiculed and ventricose below; first posterior cell sessile at end; third posterior cell with regular base and with punctiform eud.

NOMONEURA FASCIATA, Wiedemann, 1828.

Easily distinguished from all the other species on account of its greater size and of its banded abdomen. One male from Zululand, M'fongosi, December 1911, (W. E. Jones).

The present species seems to be one of the most common and most widely spread in South Africa. It has been many times described and figured, being also the unique species included in Loew's work. It is rather variable in the coloration of the body, chiefly of the thorax, but the abdominal bands are always distinct.

Cephalocera bellardii, described and figured in 1862 by Prof. Bertoloni from Mozambique, is not distinguishable from the present species.

This species shows some peculiarities in the neuration of wing. The lower veins of the first and third posterior cells are nearer to the hind border of the wing, and have a less pronounced angle at their junction; the stalks of the first posterior cell and of the anal cell are much shorter than in the other species.

NOMONEURA PARTITA, Gerstaecker, 1868.

Probably only a form of the following species.

Described from South Africa in the Museum at Berlin, but not found subsequently, and not represented in the collection before me.

NOMONEURA CALLOSA, Wiedemann 1828.

An easily recognisable species of smaller size but of rather stout body, very well figured in both sexes by Wiedemann.

A couple of specimens from Namaqualand, the male from Springbok, November 1890, the female from O'Okiep (Cape) September 1890 (R. M. Lightfoot).

In these examples the hairs of the head are dark brownish, not whitish as described by Wiedemann; the wings of the male are very faintly infuscated. The posterior veins of the wing are more distant from the hind border, and the stalks of the closed cells are longer than in *fasciata.*

NOMONEURA NIGRA, Macquart 1838.

The darker and smaller species of the genus, with practically black legs and wings. Macquart has described this species from South Afrika, but it was never recorded subsequently. I refer to it two male examples, pinned on the same pin, from Jackals Water, Bushmanland, (Cape), October 1911. (R. M. Lightfoot); they seem to correspond to the variety from Port Natal, recorded by Walker, List, VI, Suppl. 11, p. 374.

Length of body 11–12 mm.; of wing 8–9 mm. Head shining black, clothed with pale yellowish, not dense and never bushy hairs, occiput with narrow grey stripe near the eyes. Antennae very long, black, with dark reddish terminal club; third joint 4–5 times longer than the first two joints together; the club is elongate but is shorter than the third joint. Proboscis black, long, projecting to about the end of the third joint of the antennae. Thorax entirely black, even on the humeri and pleurae; on the back it is opaque, almost bare, with four longitudinal stripes of whitish pubescence. Pleurae rather shining, bare, with scarce, whitish hairs on the ptero- and metapleurae Scutellum and mesophragma black, a little shining, rugulose, bare.

Squamae and halteres black. Abdomen black, even on the venter and at end, rather shining; 2–3 and 4th segments more or less broadly red, and also the 5th, but more narrowly; it has whitish hairs at the base, but is almost bare on the remainder. Even the horn-like appendages of the male genitalia are black. Legs black, with dark reddish tibiae, tarsi and underside of the four anterior femora; hind tibiae curved, with short and scarce inner villosity; spines of the hind femora dark yellowish and thin; claws and pulvilli reddish, the former with black tips. Wings blackish, with only a narrow hind border and narrow stripes of the same cells clear. Veins blackish. The stalk of the first posterior cell is well developed; the posterior veins are rather distant from the hind border; terminal stalk of discoidal cell very short or even wanting.

CEPHALOCERA, Latreille, 1829.

With *Ectyphus* the present genus is the most characteristic one of the South African fauna; because in its true sense, as here restricted, it is exclusively South African. The genus was founded by Latreille chiefly on the characters of the thin and acute proboscis and of the long capitate antennae, for the type *Mydas longirostris*, Wied.; but the insect figured in Cuvier's Règne animal, nouv. édit. (Masson), Insectes, pl. 172, fig. 1, seems to belong to another species. The genus was subsequently treated by Macquart, 1834 and 1838, by Westwood, 1841, and by Walker, 1854, who has tabulated the known species on p. 372–376 of the 2nd Supplement of the "List". 17 species have been recorded as belonging to it; but the Australian *gracilis*, Macq. is a *Triclonus*, and *maculipennis*, Westw. a *Miltinus; dentipes*, Macq. and the two other American species described by Philippi belong to *Mitradetus*. Thus Gerstaecker in 1868 listed only 11 African species, which, with the addition of *bellardii*, Bertol., make 12, as reported in my Catalogue of 1906 and in that of Kertesz of 1909. No African species has been described subsequently. But of these 12 South African species, *Westermanni* and *rufithorax* are to be placed in *Leptomydas; botta*, Macq., from Arabia is in all probability a *Syllegomydas*, Macquart's figure of it showing no projecting proboscis; *bellardii* is a synonym of *fasciata;* and *fasciata*, *partita*, *callosa* and *nigra* belong to *Nomoneura* as shown above.

There remain thus in the genus *Cephalocera* only 4 species, all of which correspond in one important venational character, which is unique in the whole of the family. It is very curious that no Dipterologist has mentioned this character, which is recognisable even in Wiedermann's figures of *longirostris* ♂ and ♀ pl. 4 IV, fig. 21, and is well shown in Gerstaecker figure of *catulus*, pl. 1, fig. 2.

This peculiar character is derived from the branching of the postical or 5th longitudinal vein beginning much beyond the lower cross-vein and much nearer the hind border of the wing; the upper branch of the postical fork originating thus near the end of the anal cell, and not from the second basal cell as is the rule. The posterior veins become therefore completely parallel with the hind border of the wing, as is the case with the *Nemestrinidae*. It therefore shows that the lower vein of the third (or fourth) posterior cell is not Cu 1, as interpreted by Prof. Arias, but is M 4, in accordance to the new conception of Dr. Tillyard.

It may be noted that the genus *Cephalocera* is distinguished from the genus *Syllegomydas*, besides the venational characters, by the very different form of the proboscis and of the antennae.

The characters of the genus *Cephalocera* as here restricted, are as follows: — Head hollowed at vertex. Eyes bare, converging below in front view; anterior ocellus rudimentary. Antennae very long (but in one case short), with the fourth joint forming a complex with the third (and not with the club); terminal club elongate and less swollen (but in one case rounded and swollen). Proboscis very characteristic, long, thin, acute at end, with very small terminal flaps; palpi very short, with rounded end and long-haired. Thorax with long hairs, chiefly in the middle; ptero- and metapleurae hairy; surface smooth, like that of the abdomen. Abdomen elongate, but not pedunculate; male genitalia of peculiar form, with the horn-like appendages or style converging interiorly with their ends in contact; ovipositor with terminal circlet of spines. Hind femora of the male more, of the female less thickened, armed in both underneath with two rows of spines placed on distinct tubercles; hind tibiae straight or only a little curved, without terminal spur, or only with a short obtuse apophyse. Venation of the wing like that of *Leptomydas*, but with the fourth longitudinal vein ending into the first, and therefore the first posterior cell is closed and stalked; discoidal cell very narrow at end, its terminal cross vein being much shorter than the terminal cross vein of the third posterior cell (but sometimes the opposite takes place; lower vein of the third posterior cell originating from the anal cell near its end; anal vein rather straight, bent below at end; ambient thin; no hind marginal cross vein.

Type: Mydas longirostris, Wied. 1829.

The species, with the addition of a new one, can be distinguished as follows: —

(8) 1. Antennae very long, as long as or even a little more than the proboscis; antennal club less swollen and elongate, but shorter than the third antennal

joint; hind tibiae quite simple at end; back of thorax with whitish or reddish hairs; wings more or less infuscated, with a well developed alula.

(7) 2. Antennae for the greatest part black; wings more or less infuscated.

(4) 3. Legs entirely yellowish, even on the less thickened hind femora; second submarginal cell and third posterior cell with broad end . . . *longirostris*, Wied.

(3) 4. Hind legs with more thickened, and black or blackish, hind femora; third posterior cell with narrow end.

(6) 5. Head and thorax with whitish hairs; size smaller . *fascipennis*, Macq.

(5) 6. Head and thorax with reddish hairs; size greater . *umbrina*, Gerst.

(2) 7. Antennae in greatest part reddish; hind femora thickened and blackish; wings nearly hyaline . . . . . *catulus*, Gerst.

(1) 8. Antennae short, only half as long as the proboscis, with a rounded and greatly swollen terminal club, which is equal in length to the third joint of the antenna; hind femora greatly thickened and black; hind tibiae with the internal terminal angle produced into a short rather obtuse process; back of thorax with blackish hairs; wings quite hyaline, with rudimentary alula . . . . . *brachycera*, sp. nov.

Cephalocera longirostris, Wiedemann, 1829.

The type species of the genus, at once distinguishable by its slender and entirely yellowish legs, though the hind femora may be infuscated on the apical half (Wiedemann's original figure).

1 ♂ and 2 ♀ from O'Okiep Namaqualand, (Cape) September-October 1890 (R. M. Lightfoot); another ♂ without data.

This species has been many times described and figured. The abdominal tergites are entirely shining, black above in both sexes and reddish on sides, like all the sternites. Only the two terminal segments of the female abdomen show the peculiar pubescence directed forward. Legs clothed with very long white hairs, which are less developed in the female; coxae blackish-brown; claws reddish, with black tips. Discoidal cell narrower than the third posterior cell, ith terminal cross vein very short, sometimes punctiform, at any rate much shorter than the terminal cross vein of the third posterior cell, and even shorter than the discal cross-vein. Second submarginal cell with broad end, the three terminal portions of the first longitudinal vein being about the same length.

Cephalocera fascipennis, Macquart, 1838.

Distinguished from the preceding species in the more thickemed and more blackened hind legs, and in same peculiarities of the venation.

One male specimen, without the abdomen, from Knysna, Cape

Colony, October 1916, (L. Péringuey), may be considered to be this very imperfectly described species.

Head shining black, with ferruginous face, clothed with bushy white hairs. Antennae and proboscis entirely black, the latter as long as the former, measuring 2.5 mm. Back of thorax black, with reddish humeri and sides; it is clothed with long white hairs, disposed on four broad longitudinal stripes with a median much narrower one. Pleurae shining black, grey-dusted above the front coxae, bare, but with long white tufts on the ptero- and metapleurae. Squamae whitish; halteres pale yellowish. Scutellum shining black; mesophragma dull reddish brown and rugulose. Only the two basal segments of the abdomen are present in the unique specimen at hand; they are clothed with long white hairs, are shining black above, reddish-yellow on sides and reddish-brown on venter; hind border of second segment yellowish, with broad, shining reddish-bullae. Legs with shining black, white-haired coxae; those of the two front pairs are entirely reddish, with long white hairs; hind legs with thickened femora, which are shining black above and reddish below, clothed with long white hairs, and are armed underneath with strong black spines placed on reddish tubercles; hind tibiae straight, almost bare, simple at end, reddish at base and blackened on the remainder, as are also the tarsi. Wings broadly infuscated, with hyaline stripes on the discoidal and second submarginal cell, and with hyaline apex and posterior border, though the latter is faintly shaded towards the middle. The veins are blackish, but reddish at base in the anterior part of the wing. Second submarginal cell much narrowed at end, the middle one of the three terminal segments of the first longitudinal vein being thus much shorter than the other two; discoidal cell broad at end, while the third posterior cell is almost punctiform there; the discoidal cell is as broad in the middle as the third posterior cell. Alula well developed and rounded.

CEPHALOCERA UMBRINA, Gerstaecker, 1868.

This species, the distinction of which from the preceding one is not an easy matter, was described from the Cape and has not been recorded subsequently. It is not in the collection before me; the type is in the Museum at Berlin.

CEPHALOCERA CATULUS, Gerstaecker, 1868.

Even of this species I have not seen any example; it was described from the Cape and the type is in Berlin. The original figure shows perfectly the characteristic shape of the base of the third posterior cell.

CEPHALOCERA BRACHYCERA, sp. nov.

A species typical in other respects, but very different from all the others at present known on account of its very short antennae.

Type ♂, a unique specimen from O'Okiep, Namaqualand, (Cape), September 1890, (R. M. Lightfoot).

The species shows a superficial resemblance to *Leptomydas paganus*, Gerst., from which it is at once distinguished, besides the generic characters, by the much shorter antennae, and by the entirely shining abdomen of the male.

♂. Length of body 13.5 mm., with the antennae 15 mm., of wing, 10 mm.

Head entirely shining black; occiput densely whitish-dusted at sides, clothed with dense and short whitish hairs; frons with long white hairs which are bushy at vertex, and having a stripe of snow-white tomentum near the eyes, continued on the sides of the face which is clothed with dense and long white hairs. Anterior ocellus rudimentary. Antennae shorter than the transverse diameter of the head, and only half as long as the proboscis; they are black, with the terminal club bright reddish; first segment rather swollen, with long white hairs, once and a half as long as the short second joint, third segment cylindrical, twice as long as the two first segments together, its terminal part (fourth joint) as long as the first joint and distinctly thickened; terminal club very swollen, pyriform, about as long as the third joint, with a short and obtuse apical protuberance. Proboscis shining black, 3 mm. long, of the thin and acute shape typical of the genus. Thorax entirely black, with reddish humeri; on the back it is opaque with the beginning of two broad stripes of grey dust in front and between them a much narrower middle line; it is clothed with blackish or dark reddish hairs, only on the sides along the notopleural line there is a stripe of white hairs; pleurae shining black, grey-dusted above the fore coxae, the metapleurae with a dense tuft of whitish hairs. Scutellum shining black, with reddish hairs; mesophragma black, bare, dark grey-dusted. Squamae pale yellowish; halteres with yellowish stalk and blackish knob. Abdomen entirely shining black from the base to the end; the segments 2–7 with rather broad yellowish hind borders, white and shining on the sides, that of the second segment interrupted by the broad, ovate, shining black bullae; at the base there are long white hairs, on the rest the hairs are short, scattered, whitish, a little more abundant on the sides and at end; venter shining reddish, with the 3–4 terminal segments blackened, clothed with rather long and abundant whitish hairs. Genitalia short, shining black, reddish at end, clothed with whitish hairs, with the horn-like appendages convergent and with their tips in contact. Legs with shining black, white-haired coxae; those of the two anterior pairs reddish-brown, clothed with long yellowish or darkish hairs; hind femora greatly thickened, shining black above, dark reddish below, with a long whitish villosity, armed below with strong black spines placed on reddish much prominent tubercles. Hind tibiae rather thick, a little curved on the terminal half, with long rather rigid darkish or yellowish hairs, and provided at end, on the internal angle with a rather stout, obtuse process, which bears 4–5 strong reddish bristles. Tarsi reddish-brown; claws reddish, with black tips. Wings quite hyaline and iridescent, with black veins. Second submarginal cell regular, with long appendix at base, not much narrowed at end; stalk of the first posterior cell well developed; discoidal cell much narrower than the third posterior cell, and much narrowed at end, its terminal cross-vein being about as long as the discal cross-vein, and much shorter than the terminal cross-vein of the third posterior cell; this latter is exceedingly broad at base, its lower vein (M 4 or Cu 1) ending (or originating) very near the end of the anal cell; axillary lobe long and proportionately narrow; alula very narrow, rudimentary.

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